

Application No. 10/804,283
Reply to Office Action of 03/22/2007

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JUN 22 2007**REMARKS/ARGUMENTS**

In reply to the Office Action mailed March 22, 2007, applicants respectfully request reconsideration and allowance. In the Office Action the claims were restricted between two groups and claims 7-18 were rejected for anticipation under 35 U.S.C. 102(e). In reply applicants amended claims 1 and 19. Claims 1-20 remain pending in the subject application and claims 7-18 are the elected claims pending in the subject application.

In the Office Action, the claims were restricted between Group I of claims 1-6 and 19-20 drawn to a process and Group II of claims 7-18 drawn to an FCC stripping apparatus. Applicants respectfully traverse the restriction requirement. Both the process claims and the apparatus claims recite a structured packing comprising a plurality of corrugated ribbons, each corrugated ribbon having at least two bands, faces or tabs angular to each other. The Detailed Action on page 2 indicates that "the process can be conducted by using a materially different apparatus for example, a cyclone separator or an electrostatic precipitator." Applicants respectfully submit that the claimed process of stripping hydrocarbons from particulate material cannot be performed with a cyclone separator or an electrostatic precipitator. "Stripping" is a process of counter-current contacting of solids with stripping gas to absorb gases entrained with the solids from the solids into the stripping gas. Cyclone separators and electrostatic precipitators do not perform a stripping function. Hence, Applicants respectfully submit that the stripping process of the claims in Group I cannot be performed with a cyclone separator or a electrostatic precipitator. Although applicants respectfully traverse the restriction requirement, the applicants affirm their election to prosecute the claims of Group II.

Applicants have amended a typographical error in the specification. Please accept revised paragraph [0038] which has all instances of 61' changed to 61. Reference numeral 61' is not referred to in the drawings. Only reference numeral 61 is referred to in the drawings. Hence, applicants respectfully submit that no new matter is added by this revision to the specification.

Applicants have amended FIGS. 4, 6, 10 and 12. Revised FIG. 4 omits reference numeral "16" and the lead line therefor in the top right quadrant of the figure. This

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instance of reference numeral "16" was not included in the specification. FIG. 6 has been revised to include four instances of reference numeral "54" and lead lines therefor. These "bands 54" are referred to in the description of FIG. 6, *e.g.*, page 13, line 21 and page 14, line 1, but was not included in the drawing of FIG. 6. No new matter is added because the reference numerals were included in the original specification and reference numeral "54" and lead lines therefor are provided in FIGS. 5-7. Revised FIGS. 10 and 12 have reference letters "A" and "B" revised to be "A'" and "B'", respectively, to be consistent with the description in the specification of FIGS. 10 and 12. "Layers A' and B'" are shown in the drawing of FIG. 8 and described in the description of FIGS. 10 and 12, *e.g.*, page 16, line 1 and page 17, line 15-16. Hence applicants respectfully submit that no new matter is added by these revisions to the drawings.

Applicants have amended claims 1 and 19 in the event that the Examiner reconsiders the restriction requirement favorably to applicants. Applicants have amended claims 1 and 19 to recite bands and tabs in the alternative to characterize elements in both embodiments of the ribbons that are angular to each other. The angularness of tabs relative to each other in the ribbons are disclosed in the description at page 15, lines 15-18. Applicants respectfully submit that no new matter is added by this amendment.

Claims 7-18 were rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 7,179,427 B2 (the "Marchant patent"). The Detailed Action on page 3 indicates that the baffles (100) of the Marchant patent "have at least two faces angular to each other...." In reply to applicants' telephone call message of June 20, 2007, the Examiner left a voice mail message indicating that what is meant by the quoted language from the Detailed Action is that the faces of the baffles in the Marchant patent are angled toward each other. Claim 7 recites that "each corrugated ribbon...ha[s] at least two faces angular to each other." The Marchant patent has baffles in separate rows which are angular to each other but not a single baffle in the Marchant patent has two faces angular to each other. The baffles in the Marchant patent are planar. Therefore, each baffle, if construed as a claimed ribbon, does not have two faces angular to each other. Applicants respectfully submit that the edges of the baffle should not be construed as faces.

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Moreover, baffles in the same row in the Marchant patent are parallel to each other, not angular to each other. Applicants respectfully submit that the Marchant patent does not disclose all of the recitations in the claims of the subject application. Accordingly, applicants respectfully request reconsideration and withdrawal of the rejection for anticipation of claim 7 and, for at least the same reasons, claims 8-18 which depend from claim 7.

The stripping apparatus of the claimed invention is capable of performing as well as an ideal counter-current backmixed stages model. This model treats the stripper as divided into discrete stages. The gas in the catalyst phase descending into a stage is well mixed with gas rising from the previous stage. Gas descending and rising into a stage including both stripped hydrocarbons and stripping gas equilibrates to a stage gas composition. The gas in the stage with the stage gas composition then descends with the catalyst phase leaving the stage. The excess gas not required to fluidize the catalyst phase rises with the same stage gas composition to the next higher stage. FIGS. 1-3 in the subject application show the calculated performance for a backmixed-stages model based on seven stages by the dashed line. Perfect counter-current stripping performance is represented by the straight line in FIGS. 1-3.

In FIGS. 1-3, performance of two embodiments of the present invention is compared to perfect counter-current performance and ideal backmixed, seven-stages performance at catalyst fluxes of 30,000, 60,000 and 90,000 lbs./ft.²/hr. In FIGS. 1-3, stripping efficiency is the fraction of gas stripped from the catalyst, volume of stripping gas is the volume of stripping gas injected into the test stripper and volume of voids refers to the catalyst void volume. "Packing 1" refers to the embodiment shown in FIGS. 5-7 and "Packing 2" refers to the embodiment shown in FIGS. 8-12, both claimed in the subject application. "Gratings" refers to the stripping vessel comprising gratings with downcomers disclosed in US 6,680,030 B2.

In FIGS. 1 and 2, Packing 2 performs as well as a perfect counter-current model at low volume of stripping gas/volume of voids ratio. In FIGS. 1-3, at higher volume of stripping gas/volume of voids ratios, Packing 2 performs at least as well as the

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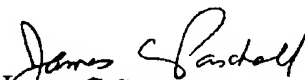
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ideal, seven back-mixed stages model. FIGS. 1 and 3 shows that Packing 1 performs just below Packing 2 and better than the gratings with downcomers in all but one exception.

Applicants respectfully request the Examiner to consider withdrawing the restriction requirement and also favorably considering the patentability of process claims 1-6 and 19-20 process of the subject invention, which at least for the same reasons as claim 7-18, are also patentable over the Marchant patent.

Applicants respectfully request reconsideration and allowance of all the claims 1-20 pending in the subject application. Should the Examiner have concerns regarding this application, she is invited to contact the undersigned.

Respectfully submitted,


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